A large cargo ship is docked at a port, with several industrial cranes visible in the background. The scene is bathed in a warm, orange glow, suggesting either sunrise or sunset. The ship's hull is dark, and the cranes are a mix of orange and grey.

Michael G. Morrow, Colonel, USA

# Sea Basing

## Logistical Implications for the US Army

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## Introduction

Predicting when and where the United States will fight future wars is a difficult task. If we were able to predict the time, place, and adversary we could design military forces prior to the outbreak of hostilities that would provide us with the best chance for success. Realistically, however, we cannot predict the next war and we must organize, train, and maintain military forces to prosecute the fight in Operation Iraqi Freedom, Operation Enduring Freedom, and the Global War on Terrorism. While we resource the current fight we must do our best to anticipate our future military needs and attempt to design our forces with those requirements in mind. Additionally, as outlined in the 2006 *Quadrennial Defense Review Report*, “we have set about making US forces more agile and more expeditionary. We also have been adjusting the US global military force posture, making long overdue adjustments to US basing by moving away from a static defense in obsolete Cold War garrisons, and placing emphasis on the ability to surge quickly to trouble spots across the globe.”<sup>1</sup>

In terms of projecting Joint forces, supporting agility and flexibility in unpredictable environments, sea basing is one of our most important future concepts. According to Admiral Vern Clark, sea basing provides enhanced operational independence and support for Joint forces through networked, mobile, and secure sovereign platforms operating in the maritime domain. Additionally, Admiral Clark contends that sea basing is one of three “powerful warfighting capabilities” of the Sea Power 21 strategy which “will ensure our Joint force dominates the unified battlespace of the 21<sup>st</sup> century.”<sup>2</sup> This article will provide an overview of the Joint sea basing concept, define and describe sea basing, provide a Navy, Marine, Air Force, and Army perspective on sea basing, and analyze the logistical implications of sea basing for the Army from the strategic, operational, and sustainment perspectives. The Army must be an active and equal participant in the research and development of the Joint sea basing concept. In terms of priorities, the Army must focus on the development of enabling systems and capabilities to support limited deployment of Army forces, primarily Army special forces and Air Assault, and especially Joint sustainment. Moreover, the Army should continue to strongly support efforts to develop Joint logistics connector systems, both materiel handling and information management.

## Future Operating Environment

The end of the Cold War era provides for many new opportunities, as well as many new challenges for our military forces. “Future security environments will become increasingly complicated through changing international relationships, increased acts of terrorism, the expanded influence of nonstate actors, and the proliferation of weapons of mass destruction. As the United States’ security strategy for the 21<sup>st</sup> century continues to evolve, our nation remains committed to its global responsibilities to ensure national security through peace, prosperity, and freedom.”<sup>3</sup>

## Special Feature

# Article Highlights

**The Army Capabilities Integration Center, in their analysis and briefings on the sea basing concept, notes that “the Army is required by Title 10, Department of Defense directives, and Joint publications to provide capabilities to competently operate from the sea, coastal, and inland waterways incident to combat on the land.”**

This article provides an overview of the Joint sea basing concept, defines and describes sea basing, provides a Navy, Marine, Air Force, and Army perspective on sea basing, and analyzes the logistical implications of sea basing for the Army.

Sea basing is the rapid deployment, assembly, command, projection, reconstitution, and reemployment of Joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary Joint forces without reliance on land bases within the Joint operations area. The sea basing concept should support major combat operations (MCO), preemptive MCO with limited forward access, humanitarian assistance operations, and counterinsurgency operations in the 2015 to 2025 time frame. Sea basing includes the closing, assembling, employing, sustaining, and reconstituting of Joint forces from a sea base up through sea state 4.

Such a broad and comprehensive operational concept has several requirements above and beyond our current expeditionary warfighting capability. Sea basing represents a complex and difficult set of tasks for the Services. It will require integrated capabilities, many not yet developed, to be brought together in an effective way to support the broad scope of mission requirements. As a Joint effort, both in design and implementation, sea basing will require coordination between the Services at all stages of development in terms of technical capabilities, new equipment, training, and operating procedures. Moreover, sea basing will require the development and implementation of capabilities which will be systems of other systems. Some of these systems will be developed and implemented at different times and will have important and independent functions separate from a sea basing operation. Most importantly, however, is the need for the concept of sea basing to be an ongoing initiative, Joint and integrated at all stages, that provides the Joint Force Command (JFC) with a tailororable and independent sea-based

The battlespace of the 21<sup>st</sup> century looks significantly different from the battlefields of the 20<sup>th</sup> century. The change in operating environment comes from three areas—significant advances in military technology, interconnected economic and industrial systems with an increased dependence on the Internet as a business and administrative tool, and the increased power of nonstate actors. Advances in military technology since the 1991 Gulf War have changed the way the Services fight. The powerful capabilities found in the combination of command and control in netcentric connected battlespace, satellite-based navigation and communication systems, smart weapon systems, and unmanned, remote intelligence, surveillance, and reconnaissance allow military forces to operate in ways unknown to the commanders of the 1980s. Interconnected economic and industrial systems and an increased dependence on the Internet have significantly changed the operating environment for our military. Today, even a discussion of military exercises or military action by the US can have an impact on current and future markets. Finally, the emergence of increasingly powerful nonstate actors represents a challenge for the US military. Given the unconventional and asymmetric threat that nonstate actors represent, our Services are reviewing their doctrine and adapting the way they are organized and the way they fight.

## Background on the Sea Basing Initiative

The sea basing concept was first formally addressed by the 31<sup>st</sup> Commandant of the Marine Corps, General Charles C. Krulak, in the capstone Marine Corps concept paper *Operational Maneuver from the Sea*. While discussing some of the benefits of the training and equipment provided by the *Operational Maneuver from the Sea* concept, General Krulak noted that “sea basing will free Marines from the need to set up facilities ashore prior to devoting their full energies to relief efforts. Improvements in ship-to-objective mobility will allow help to be delivered directly to areas where it is needed most, including places far from ports and airfields. The highly accurate and rapidly responsive weapons on board the ships of the naval expeditionary force—weapons that can be quickly employed to support Marines on the ground—will allow a landing party to present a less threatening appearance while not depriving it of a powerful means of protection.”<sup>4</sup> The Marine Corps continued to lead with sea basing concept development and professional discussion through the mid-1990s. Sea basing is discussed as one of three important future capabilities in *Maritime Prepositioning Force 2010 and Beyond*.<sup>5</sup> Additionally, a more comprehensive discussion and analysis is provided in *Sea-Based Logistics*.<sup>6</sup>

## The Joint Integrating Concept

In March of 2002, then Secretary of Defense, Donald Rumsfeld directed the Joint Staff to review and revise a cumbersome and inefficient Joint requirements system. Their answer was the Joint Capabilities Integration and Development System and the Joint operations concepts family of processes. This system and family of procedures and documents provides for capstone, operating, functional, and integrating concepts designed to efficiently integrate the efforts of the Services in describing, developing, and implementing Joint forces of the future. The Sea basing Joint integrating concept (JIC) “describes how sea basing will complement, integrate, and enable Joint military capabilities

throughout the littorals with minimal or no access to nearby land bases.”<sup>7</sup>

The JIC defines sea basing as “the rapid deployment, assembly, command, projection, reconstitution, and reemployment of Joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary Joint forces without reliance on land bases within the Joint operations area (JOA).”<sup>8</sup> Furthermore, the JIC directs that the sea basing concept should support major combat operations (MCO), preemptive MCO with limited forward access, humanitarian assistance (HA) operations, and counterinsurgency operations (COIN) in the 2015 to 2025 time frame. Sea basing includes the closing, assembling, employing, sustaining, and reconstituting of Joint forces from a sea base up through sea state 4.<sup>9</sup>

Such a broad and comprehensive operational concept has several requirements above and beyond our current expeditionary warfighting capability. Sea basing represents a complex and difficult set of tasks for the Services. It will require integrated capabilities, many not yet developed, to be brought together in an effective way to support the broad scope of mission requirements. As a Joint effort, both in design and implementation, sea basing will require coordination between the Services at all stages of development in terms of technical capabilities, new equipment, training, and operating procedures. Moreover, sea basing will require the development and implementation of capabilities which will be systems of other systems. Some of these systems will be developed and implemented at different times and will have important and independent functions separate from a sea basing operation. Most importantly, however, is the need for the concept of sea basing to be an ongoing initiative, Joint and integrated at all stages, that provides the Joint Force Command (JFC) with a tailororable and independent sea-based maneuver and sustainment capability rather than a finished product that simply goes into the JFC’s tool kit.

### **Early Efforts at Joint Sea Basing Operations**

British and US JFCs employed elements of a sea basing concept during the Falklands War in 1983 and in Operation Uphold Democracy in 1994. While neither effort was conducted completely from a base at sea, each operation had challenges of a political or geographic nature requiring the use of sea-based operations during the introduction of forces.

In June of 1983 a British joint task force conducted operations to retake the Falkland Islands from Argentina. Brigadier General Raymond Bell, in his article, *Joint Ground Logistics in the Falklands*, states “the victory was a spectacular exhibition of military power by the United Kingdom’s professional armed Services, which had to overcome many unique and difficult challenges on the ground, at sea, and in the air.”<sup>11</sup> Operating over 7,000 miles from England and in the geographically isolated Falklands, the British were presented with issues in deployment, employment, and sustainment of forces which necessitated the use of elements of a sea basing concept.

To speed the deployment and maximize space in sea transports, the British Army and Royal Marines loaded equipment administratively with “no combat loading or accountability for what items went on which ships,” requiring the British Task Force to stop and reconfigure equipment half way to the Falklands.<sup>12</sup> The

# **Article Highlights**

maneuver and sustainment capability rather than a finished product that simply goes into the JFC’s tool kit.

The author contends that the Army should be an active participant in the research and development of the Joint sea basing concept and its enabling systems. However, using Title 10 service responsibilities as a guide, capitalizing on the core missions of both the Army and the Marine Corps, and understanding that there are fiscal constraints with future concepts, it is the author’s belief the Army must take a pragmatic approach to sea basing. The Army priority for sea basing should be on enabling systems and capabilities to support limited deployment of Army forces, primarily Army special forces and Air Assault, and on Joint sustainment. Additionally, the Army should continue to work on Joint development of logistics connector systems, both materiel handling and information management. This approach keeps the Army focused on its core mission of conducting operations on land, provides for sea basing of selected Army, but primarily Marine forces, and is the most efficient and effective use of defense funds.

### **Article Acronyms**

AFSB	Afloat Forward Staging Base
AOR	Area of Responsibility
APS	Army Developed Prepositioned Stocks
BCT	Brigade Combat Teams
COIN	Counterinsurgency Operations
DLA	Defense Logistics Agency
FCS	Future Combat System
FSS	Fast Sealift Ships
HA	Humanitarian Assistance
HMMWV	High Mobility Multipurpose Wheeled Vehicle
ISO	International Organization for Standards
JFC	Joint Force Command
JHL	Joint Heavy Lift
JHSS	Joint High Speed Sealift
JHSV	Joint High Speed Vessel
JIC	Joint Integrating Concept
JMAC	Joint Maritime Assault Connector
JOA	Joint Operations Area
LCAC	Landing Craft, Air Cushioned
LMSR	Large, Medium-Speed, Roll-On/Roll-Off Ships
MCO	Major Combat Operations
MRAP	Mine Resistant, Ambush Protected
MSC	Military Sealift Command
PLS	Palletized Loading System
RSO&I	Reception, Staging, Onward Movement, and Integration

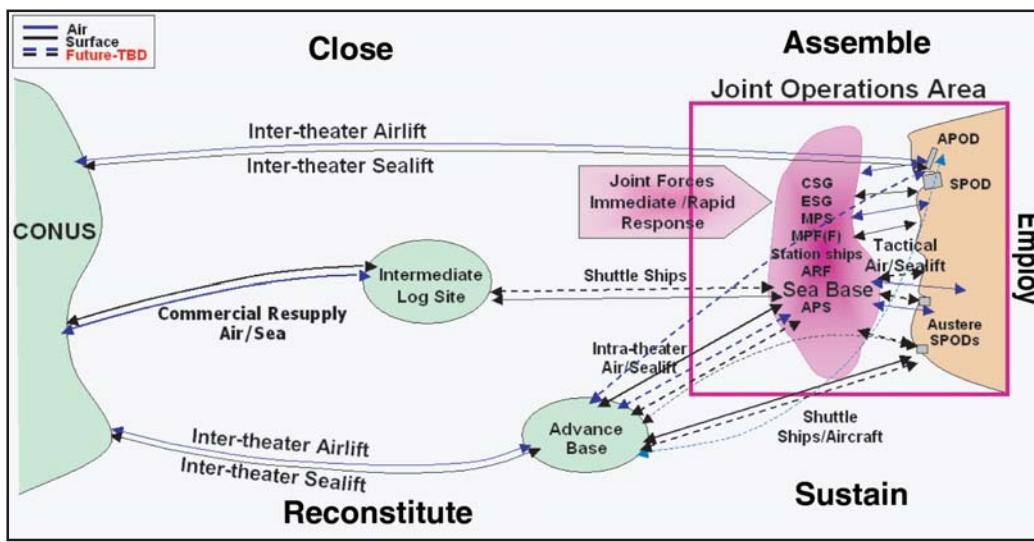


Figure 1. Sea Basing Overarching View<sup>10</sup>

British were fortunate to be able to make unopposed landings in the Falklands away from the Argentine forces. However, Argentine air attacks on Royal Navy ships and the subsequent loss of British helicopters resulted in insufficient vertical lift to sustain forces ashore or move forces from point to point inland.<sup>13</sup> A sea basing concept, with strategic sealift of combat configured forces, sufficient vertical and amphibious lift to employ and sustain forces ashore, and integrated logistical information management systems would have provided the British Task Force an opportunity to conduct more efficient and effective operations in the Falklands. As it was, however, the British were successful, in large part, due to the professionalism, bravery, and dedication of the soldiers, sailors, airmen, and marines.<sup>14</sup>

In September of 1994, the United States, under the auspices of United Nations Resolution 940, deployed forces into Haiti. Planning for a possible military operation into Haiti had been considered for several years, including operational plans for a permissive intervention and a nonpermissive invasion. Most of the planning by the Joint Force Command, the XVIII Airborne Corps, concerned a nonpermissive invasion utilizing 82<sup>d</sup> Airborne Division paratroopers as the main effort. Within a few days of the invasion, President Clinton sent former President Carter to meet with the military dictator in Port-au-Prince. The military junta agreed to change its hard line position and the XVIII Airborne Corps had to quickly adapt the invasion plan into an intervention plan.<sup>15</sup>

The 82<sup>d</sup> Airborne paratroopers were turned around during their flight from Fort Bragg, North Carolina to Haiti. Instead of the shock of an airborne assault, the intervention effort would be led by the 10<sup>th</sup> Mountain Division. One infantry brigade of about 4,000 soldiers had been loaded onto the USS *Eisenhower*, an aircraft carrier, sailing out of Norfolk, Virginia. The mountain soldiers, using US Army helicopters, conducted the initial landings into Haiti off the deck of the Eisenhower. With the permissive environment offered by the Haitian military junta, land-based facilities in Port-au-Prince and selected other cities in Haiti were occupied and used for troop arrival, departure, and logistic support bases.<sup>16</sup> While the Joint efforts by the crew of the Eisenhower and the soldiers of the 10<sup>th</sup> Mountain are not at the level envisioned by the sea basing concept, they do represent

an early afloat staging base effort that provided the JFC with flexible access options from a secure, fully integrated platform at sea. On the other hand, the use of the USS *Eisenhower*, a \$2.5B aircraft carrier, as a logistics support ship for Army troop deployment, had some disadvantages. A less expensive afloat staging base would have been a better option and would not have exposed the aircraft carrier to substantial risks due to its close proximity to land without its combat air wing.

To support the need for strategic power projection of forces, the Army developed

prepositioned stocks (APS), consisting of unit sets of equipment, contingency supplies, and sustainment stocks. APS represents a capability, not just equipment and supplies, as it is strategically positioned on land and at sea, maintained for immediate issue, and configured to support Army brigade combat teams (BCT) and sustainment brigade deployment. The Army's APS transition plan supports four heavy BCTs, two sustainment brigades, and selected supplies and ammunition afloat, organized into Army strategic flotillas.<sup>17</sup> This equipment is aboard eight large, medium-speed, roll-on/roll-off ships (LMSR), and two container ships operated by the US Navy's Military Sealift Command (MSC). While APS represents an important strategic support capability, it also has some limitations. Unit sets do not have accompanying individual items and there are no aircraft or unmanned aerial vehicles prepositioned. The afloat equipment is administratively loaded to maximize space. The LMSRs, container ships, Army watercraft, and APS concept requires a secure facility, parking space to marshal vehicles, and a significant administrative process of several days to complete the linkup of personnel and equipment in the reception and staging process. To support the sea basing concept envisioned by the JIC, APS needs to be significantly changed to support an operationally employable, combat configured, force projection capability.

## A Navy Perspective on Sea Basing

To a certain extent, the US Navy already conducts sea-based operations as a matter of course. Small numbers of ships operating for long periods at sea can provide command, control, and communications capabilities, sustained fires, and a persistent defensive capability. Nuclear power, efficient configurations and designs in shipbuilding, and underway replenishment make the US Navy the world's most powerful at sea force with the best staying power. From a sea basing perspective the challenge arises when all the aforementioned tasks are undertaken and we add an additional set of tasks to project and sustain a force to fight on land from the sea base.

An expanded concept of sea basing is a consistent theme in any review of current US Navy considerations and strategy as we move into the 21<sup>st</sup> century. In considering Admiral Vern Clark's discussion of *Sea Power 21*, sea basing within the triad

of sea shield, sea strike, and sea basing, is a fundamental concept that is essential to projecting decisive Joint capabilities in the future. “Sea-based operations use revolutionary information superiority and dispersed, networked force capabilities to deliver unprecedented offensive power, defensive assurance, and operational independence to JFCs.”<sup>18</sup>

The US Navy’s *Transformational Roadmap* also discusses the importance of sea basing, or enhanced networked sea basing, to future US Navy and Joint operations. The expanded sea basing concept will “use more employable naval forces to provide JFCs with the ability to project and sustain multidimensional power from the sea.”<sup>19</sup> The *Transformational Roadmap* acknowledges a “declining number of overseas bases,” assumes an “uncertain degree of future host nation support,” and “exploits the strategic, operational, and tactical mobility available to those who control the sea.”<sup>20</sup> Three central themes—*independence, integration, and synergy*—emerge when considering sea basing from the US Navy perspective. For 21<sup>st</sup> century operations, sea basing “demonstrates the ability of the Navy–Marine Corps Team to develop and pursue a common vision that enables and exploits the capabilities being developed by the other Services and agencies.”<sup>21</sup>

### **Marine Perspective on Sea Basing**

Expeditionary, amphibious operations from the sea represent the hallmark of US Marine Corps operations. The Marine Corps consistently organizes, plans, trains, and deploys to conduct amphibious operations across the full spectrum of military operations. The US Navy and the US Marine Corps complement one another to provide the world’s most capable fighting force employed from the sea. Task organized, trained, and forward deployed as a combined arms team of air and ground elements, the Marine expeditionary unit, in conjunction with an amphibious squadron, provides a ready and capable response force for the JFC that cannot be replicated by any other US military Service.<sup>22</sup>

The Marine Corps is “the nation’s expeditionary force with the purpose of projecting sustainable military power ashore” states Marine Corps General Michael Hagee in a recent speech at the American Enterprise Institute.<sup>23</sup> The ability to sustain forces from the sea, without the use of a land base for staging or support, is of growing importance to the Marine Corps. In support of increased independent operations, General Hagee additionally offers “we must consider the advantages of sea basing as a national and Joint capacity. Sea basing will provide a set of strike, defensive, logistics, and command and control capabilities.”<sup>24</sup>

A constant theme with both US Navy and US Marine Corps future operations is the shift from an open sea, blue water maritime requirement toward a requirement to conduct operations in the littorals, utilizing closely integrated maritime operations. Sea basing of Marine forces provides an ideal operational construct for employment. From the Marine perspective sea basing seems to be more of a set of evolutionary improvements, rather than a transformational leap, given the substantial amphibious assault capability the Navy/Marine Corps team already employs. In recent warfighter talks on amphibious requirements, the importance of sea basing was stressed as a “key enabler in operationalizing the Naval Operations Concept” of more widely dispersed forces with an increased forward presence capability.<sup>25</sup> The combined arms team of Marines in the Marine expeditionary

unit or Marine expeditionary brigade structure, with their robust organic logistical support, is already close to ideal as a sea-based force. From the Marine perspective, the enablers to support sea basing will primarily come from the implementation of the Maritime prepositioning force (future) and the development and implementation, or improvement of strategic and operational-level integrated connectors providing intratheater and intertheater lift of Marines and equipment.

### **Air Force Perspective on Sea Basing**

At first glance, a discussion of sea basing from an air perspective seems a bit strange. Why would the Air Force have a position on sea basing of Army and Marine forces? Does the Air Force have a role in sea basing? The sea basing JIC mentions two areas that may be important considerations from an air perspective—flexibility for the JFC and the lack of secure points of debarkation within the JOA. Sea basing’s use of strategic fast sealift, staging at sea, and operational maneuver from the sea base to shore (or objective) by air or sea connectors, decreases or potentially eliminates the need for secure ports and airfields. This reduces the requirement for intratheater and intertheater airlift into the JOA by the Air Force. The increased airlift capacity can then be used to support other forced entry options such as the employment of airborne or special operations forces. The increased airlift capacity can also be used to support the movement of personnel, equipment, or critical sustainment supplies to advanced, staging or supporting bases adjacent to the JOA. The multiple deployment paths offered by sea basing and a decreased requirement for Air Force airlift provides the JFC with additional options and increased flexibility across the range of military operations.

### **Army Perspective on Sea Basing**

The US Army has changed significantly in the past 7 years. To meet the needs of 21<sup>st</sup> century operations and the requirements of JFCs, the Army has transformed its combat, combat support, and combat service support structures to more deployable, independent, modular formations. The modularized brigade combat teams, with modular multifunctional support brigades of aviation, fires, sustainment, reconnaissance, and maneuver enhancement are enabled by redesigned Army installations. The redesigned installations are configured to support rapid deployment and reorganized division and corps headquarters ready to accept personnel from other Services to become a Joint force headquarters. This transformation in component structures, combined with a transformation in training, operations, and equipment, supports a more strategically agile, campaign capable, expeditionary Army.

When analyzing the Army’s requirements to support future major combat operations, preemptive major combat operations with limited forward access, humanitarian assistance operations, and counterinsurgency operations, the Army has shown interest in sea basing as an enabler of expeditionary operations and sustainment. The Army Capabilities Integration Center, in their analysis and briefings on the sea basing concept, notes that “the Army is required by Title 10, Department of Defense directives, and Joint publications to provide capabilities to competently operate from the sea, coastal, and inland waterways incident to combat on the land.”<sup>26</sup> Additionally, “the Army does have a stake

in Joint sea basing that relies on the Joint interoperability of air and surface connectors that link the sea base with the shore, the sustainment stocks supplied from the sea base to other platforms and to the shore, and the ability to conduct reception, staging, onward movement and integration from the sea.”<sup>27</sup> Given the Army’s expeditionary requirements, Service responsibilities, and the current and future operating environment, more discussion and analysis on the Army’s role in sea basing is required.

### **Logistical Implications for the Army**

Title 10 of the United States Code describes the role of the Army as “organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land.”<sup>28</sup> From a strategic perspective, the Army normally deploys administratively, with equipment by sea and personnel by air, using secure sea and air ports of debarkation. Army forces need to undergo a process of reception for personnel and equipment, as well as staging of tracked and wheeled vehicles and aircraft, where personnel tactically configure smaller equipment and accompanying loads of supplies, then conduct onward movement and integration as a combat ready, combined arms team. With the exception of Army airborne and special forces utilizing Air Force airlift, the Army has no strategic forced entry

To break the analysis down we will need to look at logistical implications for the Army in terms of strategic, operational, and sustainment considerations.

### **Strategic Enabling Capabilities**

In considering the strategic enabling capabilities, it is useful to look at both the deployment and assembly functions for personnel and equipment. Unlike the continuously embarked Marine expeditionary units, Army BCTs must prepare and strategically deploy from their home station through a combination of ground (road or rail), air, and sea modes of transportation, then assemble the BCT in a secure staging area on land prior to conducting combat operations. In order to employ the BCT utilizing a sea-based concept, the Army must address the lack of strategic sealift capable of handling combat configured forces from point of embarkation to the sea base. The Army must also consider the logistics doctrine, training, and equipment issues found in the unfamiliar maritime environment. Moreover, except for very short duration operations, sea basing of Army forces will have many of the same requirements and challenges of shore based support, to include training, berthing, and feeding soldiers, meeting their medical and dental needs, and providing for their equipment maintenance support.

**To meet the needs of 21<sup>st</sup> century operations and the requirements of JFCs, the Army has transformed its combat, combat support, and combat service support structures to more deployable, independent, modular formations. The modularized brigade combat teams, with modular multifunctional support brigades of aviation, fires, sustainment, reconnaissance, and maneuver enhancement are enabled by redesigned Army installations.**

capability. This administrative deployment and assembly process may be fine in a permissive environment, or where secure sea and air ports are available in the vicinity of the operational area. Without these facilities, our Joint doctrine provides for a forced entry amphibious assault and ship-to-objective capability within the Marine Corps. In the future, the concept of Joint sea basing would allow for the strategic and operational movement and staging, in combat configurations, of Army and Marine forces. As the land-based combat force, however, the Army is not designed, equipped, trained, configured, or resourced to operate in a maritime environment.

While sea basing is much more than a logistical capability, logistics plays a major role in every facet of the sea basing concept. In considering Army forces and sea basing, it is perhaps most important to analyze the logistical implications. What existing logistical capabilities already support sea basing? What new logistical capabilities will the Army require? Are these capabilities required by other Services or specific to the Army?

Current strategic sealift to the Army is provided by the US Navy’s MSC. MSC’s LMSRs, and its fast sealift ships (FSS), provide the US military with an outstanding global deployment capability. However, as outlined by the Army Capabilities Integration Center, our strategic sealift capability has limitations that need to be addressed to support the sea basing concept. Some of the most important limitations include a requirement for improved sea ports of debarkation, the inability to selectively offload equipment or immediately employable combat power, and the inability to transport unit personnel.<sup>29</sup>

To address this requirement, the Navy is working on the initial concept designs of the Joint high speed sealift (JHSS) ship. Army Capabilities Integration Center data states that the JHSS, as an intertheater strategic connector, will support the rapid deployment of a combat configured, battalion sized force from port of embarkation to a sea base, unimproved port, or low grade shoreline.<sup>30</sup> An important benefit of the JHSS is that it will support both Army and Marine combat configured deployments with

personnel embarked. Also, the requirements for the ship seem to be in line with current technologies as opposed to future, potentially cost prohibitive, technologies. The Army should make a dedicated effort to work closely with the Navy in the research, concept design, and development of the JHSS to provide a Joint platform that best supports Army, Navy and Marine operations and integrates with existing and future support systems.

A second sea basing logistical consideration from a strategic enabling capability perspective concerns systems to support assembly at sea. The sea basing concept requires the intratheater movement of personnel and equipment or intertheater movement of prepositioned stocks and personnel linked up to the base at sea. After the transfer from LMSR, FSS, or JHSS, the unit must conduct assembly functions, to include precombat checks, weapons testing, issue and storage of combat loads, and tactical staging for final employment on some type of platform at sea. Ideally, sea basing would utilize a fully capable afloat staging base where personnel and equipment can conduct these assembly functions. However, no dedicated afloat staging bases exist. Current capabilities require an in lieu of mission and the adaptation of a vessel, such as the carrier *USS Kitty Hawk* in Operation Enduring Freedom, an amphibious assault ship such as an LHA, or a converted container ship. With the exception of the LHA, these platforms are not optimized to support an Army battalion or BCT staging at sea. Also, as seen in the Operation Uphold Democracy and Falklands War cases, changing the mission of the carrier, LHA, or container ship prohibits each from conducting its strike, Marine amphibious support, or container transport mission.

To mitigate this shortfall, the Army has identified the need for an afloat forward staging base (AFSB). The Army Capabilities Integration Center has recently chartered an integrated capabilities development team to examine the staging base requirements, conduct an assessment, and produce a concept draft. In the near term, the AFSB concept calls for the vertical maneuver of light (wheeled) forces, with a long-term focus on mounted, medium force (Stryker vehicle or Future Combat System) vertical maneuver.<sup>31</sup> In support of the Army's at sea assembly and staging needs, MSC is also researching the possibility of modifying or reconfiguring ships in their inventory or ships under contract. These initiatives are important steps toward realizing the sea basing concept. However, there are additional logistical implications and considerations at the operational level that demand attention.

## Operational Enabling Capabilities

Connecting physical transport systems and employing Army forces from the sea base are two very difficult sets of tasks the Army must address when considering the employment of a force from a sea base. In order to physically connect and enable the movement of Army combat configured personnel and equipment between strategic and operational-level sealift, sea base and amphibious or vertical maneuver platforms, every system, regardless of service lead, must be developed in a mutually supporting, truly Joint manner. The JHSS, for example, must be able to connect efficiently with the AFSB to move personnel and equipment between platforms up through sea state 4, or in 7.5-foot waves. Moreover, any sea base to shore, or sea base to

objective transport system must be fully integrated with the AFSB systems to effectively support operations.

Combat operations in Iraq and Afghanistan and force protection concerns have increased the size and weight of all Army units. For example, in a light force equipped with high mobility multipurpose wheeled vehicles (HMMWV), four combat equipped soldiers and their vehicle weighed approximately 7,000 pounds in 2001. A UH-60 helicopter (carrying up to 7,500 pounds) or a CH-47 helicopter (carrying up to 16,500 pounds) could transport this load from an AFSB to shore. However, mine resistant, ambush protected (MRAP) vehicles with combat equipped soldiers may be triple or even quadruple the HMMWV gross weight. In the medium forces, combat loaded Stryker vehicles and the Future Combat System (FCS) armored vehicles will likely weigh significantly more than 16,500 pounds. These combat systems exceed all Army vertical lift capabilities.

In order to address the need to vertically move medium forces, the Services are looking at several medium-heavy and heavy aircraft, with the Army looking at the Joint heavy lift (JHL) aircraft as an integral platform of the FCS. The initial concept of a JHL aircraft includes a four blade, tilt rotor aircraft, which increases today's vertical lift weight and distance capabilities. The aircraft would resolve several capability gaps, to include the following:

- The inability to rapidly maneuver a mounted combat unit into austere environments at operational distances.
- The inability to provide single lift capability of 16 to 26 tons for 210 to 500 nautical miles.
- The inability to transport 20-foot container or flatrack configured loads ship to shore.<sup>32</sup>

Conceptually, the JHL provides some exciting new capabilities. However, four-blade, tilt rotor, heavy lift aircraft technology is still in the early stages of development and may be extremely expensive. With the stated capabilities the JHL would likely be a very large and very powerful aircraft. It may easily exceed US Navy amphibious ship landing constraints and will require specifically engineered sea-based platforms from which to operate.

In addition to maneuvering forces by air from a sea base, the Army must consider sea employment. Amphibious operations to shore, while not required at any large scale since the Korean War, still represent an additional method of maneuvering, or in a more permissive environment, administratively moving Army forces from a sea base. As part of Title 10 responsibilities, the Army maintains a considerable inland distribution capacity including two prepositioned sets of Army watercraft, one in the United States Pacific Command area of responsibility (AOR) and one in the United States Central Command AOR. The landing crafts, tugs, barges, and floating causeways provide the Army with the capability to accept cargo from ships and move cargo to port facilities or directly to shore.<sup>33</sup> In terms of the sea basing JIC, these Army capabilities would support "sustaining and reconstituting of Joint forces from a sea base." However, to support "closing, assembling, and employing Joint forces from a sea base" also required by the JIC, Army forces require significant additional amphibious assault capability, more in line with what the Marine Corps employs or plans to employ in the future.

Two platforms under consideration provide the *connectors* to employ combat configured forces from the sea base to shore over water. The Joint maritime assault connector (JMAC), would offer an improvement of the capabilities found in the Marines, or landing craft, air cushioned (LCAC). However, the Army must also consider what's already known to our Marines, such as amphibious ships with well decks to store and load JMACs, corrosion control when operating from air cushioned vehicles, and a myriad of tactical-level amphibious assault logistical considerations. Another connector platform that would support enhanced combat force projection from the sea base is the Joint high speed vessel (JHSV). With an objective range of 1200 nautical miles and a payload of 700 short tons, the JHSV would mitigate several capability gaps and provide the JFC with "intratheater maneuver and maneuver support of combat configured, operationally ready units within the JOA."<sup>34</sup> From an Army perspective, considering the logistical implications, the JHSV seems very promising. The JHSV would mitigate the reception, staging, onward movement, and integration (RSO&I) requirement and, by employing a company sized unit with personnel and equipment embarked, reduce the number of new maritime logistical tasks the Army unit must master.

## Enabling Capabilities to Support Sustainment

Sustainment from the sea base is a final area of concern when considering logistical implications for the Army in sea basing. Our Joint doctrine defines sustainment as "the provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or the national objective."<sup>35</sup> In order to conduct effective sea-based operations, the Services must develop a high degree of efficiency in the enabling logistics systems to support sustainment. At sea there's simply no room for extra gear and extra weight. Joint doctrine maintains that "each Service is responsible for the logistics support of its own forces, except when logistics support is otherwise provided for by agreements with national agencies or allies, or by assignments to common, Joint, or cross-servicing."<sup>36</sup> However, can we really afford to have multiple logistics management information systems with two or three sets of similar supplies and competing replenishment systems when, as required by the sea basing JIC, we are employing "Joint combat power from the sea," "while providing continuous support [and] sustainment," "without reliance on land bases within the JOA?"<sup>37</sup>

With space, speed, and flexibility at a premium, it is essential for logistics systems to integrate to the greatest degree possible when sea basing forces. While the Defense Logistics Agency (DLA) and the Services have made many advances in the area of asset visibility and common equipment and repair parts, more work is needed. For sea basing, continuing work toward common repair parts and repair parts software systems between Services supports a more efficient use of space and decreases overall costs by combining research and development efforts and reducing stockage levels at the unit and support levels. Integrated logistics management information support systems, or even future common logistics management information support systems, would also decrease software and hardware research, development, and implementation costs for the Services.

Common systems also provide the sea-based units with the ability to cross-level stocks and provide more efficient support to sister Services. Understanding that this integration of systems is much more complicated than it seems, the Army should still make every effort to work with DLA and the other Services on Joint logistics management and supply support.

With the fielding of the Palletized Loading System (PLS) in the early 1990s, the Army began to make some headway into moving supplies using integrated systems—increasing speed of movement by decreasing handling requirements. Utilizing a demountable *flatrack* trailer bed, the ability to handle standard 8 x 8 x 20 foot containers, and with a self-loading and unloading capability, the PLS provides the Army with great flexibility in support of accompanying loads and sustainment operations. Taking this concept to the next level, we should consider intermodal transfer of sustainment stocks utilizing 8 x 8 x 20 foot containers as a common platform for transportation. For many years the civilian sector has moved cargo through road, rail, and sea modes of transportation with International Organization for Standards (ISO) 20 foot and 40 foot containers. For sustainment, we should take advantage of this civilian experience and consider containerized cargo all the way from the depot to the objective area. Cargo could be preconfigured to speed initial or emergency resupply of forces. Replenishment supplies could be containerized to reduce order, ship, and unit wait times. The Army and MSC are already using this concept in APS with two container ships supporting ammunition and general supplies. ISO containerization and the movement of supplies by sealift to, through, or from the sea base would be a more efficient process of sustaining forces.

## Recommendations

A final recommendation for the Army concerning sea basing requires a short review of the concepts, advantages, and disadvantages. The sea basing JIC outlines several advantages of sea basing.

- Expands access options and reduces dependence on land bases
- Uses sea as maneuver space
- Leverages forward presence and Joint interdependence
- Provides scalable, responsive Joint power protection
- Sustains Joint force operations from the sea
- Creates uncertainty for adversaries
- Supports independent action

As with any future concept sea basing also has some disadvantages.

- Several required systems do not exist (Joint logistics and air and sea connectors)
- Substantial costs in a constrained budget environment
- May be limited by weather
- Decreased relationships with foreign nations as we reduce dependence on land bases<sup>38</sup>

The sea basing concept involves a complex *system of systems*. If we look closely at sea basing from an Army perspective, we can see several logistical implications. From a strategic point of

view, we would need to change APS, develop high speed sealift of combat configured forces, and construct an AFSB. At the operational level the Army would need to develop connecting systems that integrate all forms of air and sea transportation as well as develop platforms like the JHL, the JMAC and JHSV to employ Army forces. Considering sustainment, the Army would need to work closely with DLA and sister Services to develop Joint logistics management information systems and maximize the efficiency of containerized supply support. The approach in each of these initiatives must be truly joint, not simply joint in name. The Army must assign experienced and quality officers and noncommissioned officers to Joint working groups. We must also embrace our sister Service members when we have the lead effort. Similar to the themes we find with Joint logistics doctrine, breaking down traditional Service barriers and working together will reduce redundancies between Services, reduce costs, and increase our effectiveness through the synergy we achieve.<sup>39</sup>

Certainly sea basing represents an important future concept in terms of force projection and flexibility for our military. The question then becomes, does the Army need to apply these recommendations, and consider many others, to embrace the sea basing concept? If so, how much of the Army should we consider for sea basing and at what cost? Given that Army combat and support units are not trained, manned, or resourced for maritime operations, should they be adapted to what is fundamentally a Marine Corps mission?

## Conclusion

This article provided an overview of the Joint sea basing concept, defined and described sea basing, provided a Navy, Marine, Air Force, and Army perspective on sea basing, and analyzed the logistical implications of sea basing for the Army. It is this author's belief that the Army should be an active participant in the research and development of the Joint sea basing concept and its enabling systems. However, using Title 10 Service responsibilities as our guide, capitalizing on the core missions of both the Army and the Marine Corps, and understanding that we have fiscal constraints with future concepts, the Army must take a pragmatic approach to sea basing. The Army priority for sea basing should be on enabling systems and capabilities to support limited deployment of Army forces, primarily Army special forces and Air Assault, and on Joint sustainment. Additionally, the Army should continue to work on Joint development of logistics connector systems, both materiel handling and information management. This approach keeps the Army focused on its core mission of conducting operations on land, provides for sea basing of selected Army, but primarily Marine forces, and is the most efficient and effective use of defense funds.

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